WHAT IS CLAIMED IS:

1   1.   A system for routing a data packet on networks,

2   comprising:

3   a control element for managing routing tables;

4   forwarding elements, each receiving one of the routing

5   ·tables from the control element, and forwarding the data packet

6   according to the received routing table and a destination

7   address in the data packet; and

8   a private network that connects the control element and the

9   forwarding elements.

1   2.   The system of claim 1, wherein the private network

2   comprises a local area network.

1   3.   The system of claim 1, wherein the forwarding elements

2   are distributed across the private network.

1   4.   The system of claim 1, wherein the data packet

2   includes a time-to-live counter that is decremented by one of

3   the forwarding elements that receives the data packet directly

4   from other routers.

1   5.   The system of claim 1, wherein, for each of the

2   networks, the routing table received by any of the forwarding

3   elements includes an interface port of the forwarding element

4   through which the remote network is accessible by the forwarding

5   element.

1   6.   The system of claim 1, wherein, for each of the

2   networks, the routing table received by any of the forwarding

3   elements includes information about a gateway to which the

4   network is directly connected.

1   7.   A method of routing a data packet on networks,

2   comprising:

3   receiving, at each of a plurality of forwarding elements, a

4   routing table from a control element via a private network;

5   receiving the data packet, at one of the forwarding

6   elements, directly from one of the networks; and

7   forwarding the data packet according to the routing table

8   and a destination address in the data packet.

1   8.   The method of claim 7, further comprising decrementing

2   a time-to-live counter, at the forwarding element that receives

3   the data packet directly from the one of the networks.

1   9.   The method of claim 7, further comprising, at the

2   control element, modifying an interface port for each of the

3   networks in the routing table before sending the routing table

4   to one of the forwarding elements.

1   10.   The method of claim 9, wherein the modifying includes

2   indicating in the interface port a port of the forwarding

3   element through which the network is accessible by the

4   forwarding element.

1   11.   The method of claim 7, wherein, at the control

2   element, changing a gateway field for each of the networks in

3   the routing table before sending the routing table to one of the

4   forwarding elements.

1   12.   The method of claim 11, wherein the changing includes

2   indicating in the gateway field one of the forwarding elements

3   to which the network is directly connected.

1   13.   An article comprising computer-readable medium that

2   stores instructions for causing a machine to:

3   receive, at each of a plurality of forwarding elements, a

4   routing table from a control element via a private network;

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5   receive the data packet, at one of the forwarding elements,

6   directly from one of the networks; and

7   forward the data packet according to the routing table and

8   a destination address in the data packet.

1   14.   The article of claim 13, further comprising

2   instructions for causing a computer to decrement a time-to-live

3   counter, at the forwarding element that receives the data packet

4   directly from the one of the networks.

1   15.   The article of claim 13, further comprising

2   instructions for causing a computer to, at the control element,

3   modify an interface port for each of the remote networks in the

4   routing table before sending the routing table to one of the

5   forwarding elements.

1   16.   The article of claim 15, wherein the modification

2   includes indicating in the interface port a port of the

3   forwarding element through which the network is accessible by

4   the forwarding element.

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1   17. The article of claim 13, further comprising

2 instructions for causing a computer to, at the control element,

3 change a gateway field for each of the networks in the routing

4 table before sending the routing table to one of the forwarding

5 elements.

1   18. The article of claim 17, wherein the change includes

2 indicating in the gateway field one of the forwarding elements

3 to which the network is directly connected.